

# INTERNATIONAL SEMINAR ON THE MANAGEMENT OF RESEARCH AND DEVELOPMENT

F.F. Neubauer

## Corporate Strategy Part II

### Strategic Management and the R&D Function

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#### Links between factors boosting profitability and R&D

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- Product quality as an example
- Two views on quality
- Impact of quality on ROI
- The link between technology and quality
- Formulating a product quality strategy
- Developing action plans

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R&D2

## DIFFERENTIATION FROM COMPETITORS

### KEY PROFIT DETERMINANTS

- \* Quality
- \* Relative price
- \* New product introductions

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## The Two Views of Product Quality

- Internal: Quality control, conformance to specifications  
(linked to manufacturing productivity)
- External: Customer-perceived quality  
(linked to value and customer satisfaction)

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## DEFINITION OF 'QUALITY'

- \* The customer's judgement, not yours
- \* Both the product and the associated services
- \* Not absolute, but relative to competitors
- \* Does not include price

Quality Index =

Percent of Sales from Superior Products  
minus  
Percent of Sales from Inferior Products

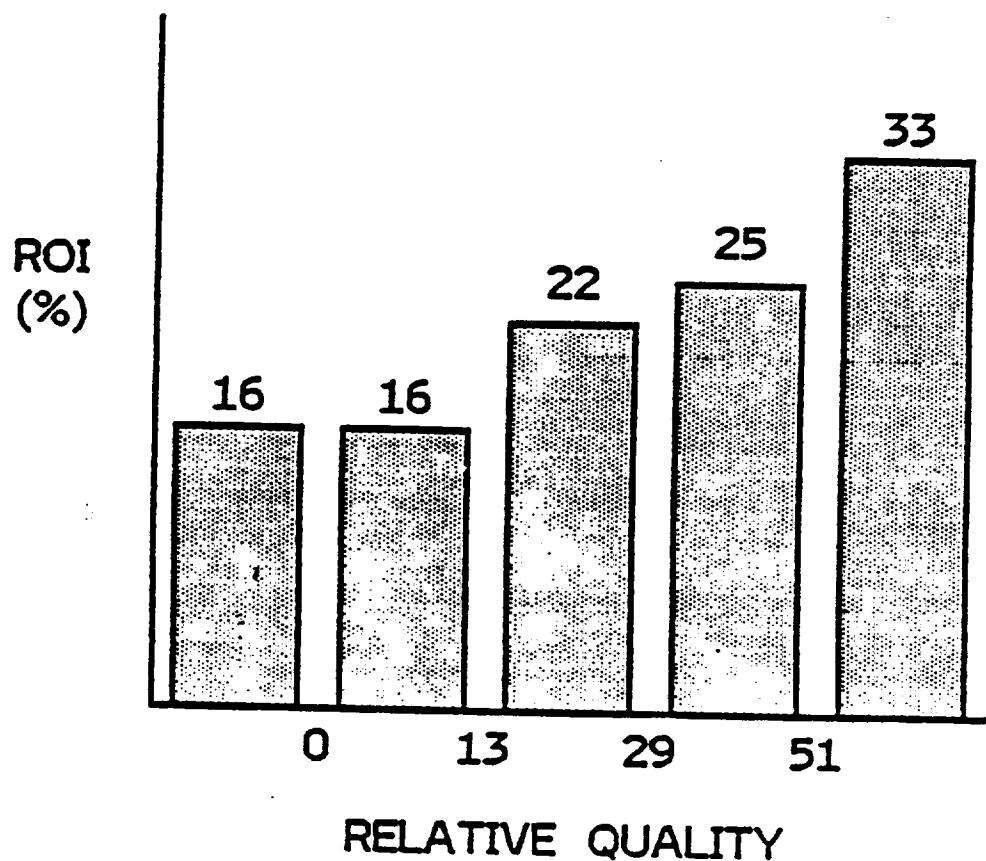
5 products

+	①	40%
=	②	25%
=	③	20%
→	④	10%
=	⑤	5%

$$\underline{40 - 10 = 30}$$

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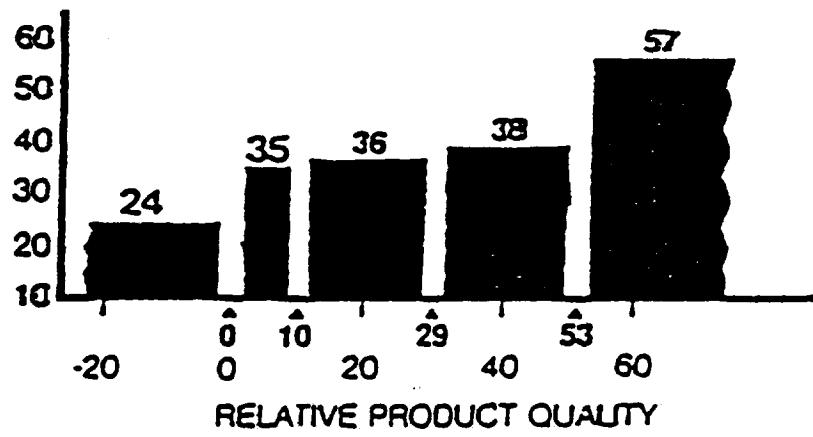
# HIGH QUALITY PRODUCTS & SERVICES ARE MOST PROFITABLE



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**THE PROBABILITY OF ACHIEVING AN "ADEQUATE" RETURN  
IMPROVES WITH RELATIVE PRODUCT QUALITY**

**% BUSINESSES WITH PRE-TAX ROI  
GREATER THAN 25%**



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# Quantifying Customer-Perceived Relative Product Quality

## Identify Key Customer Needs

Business \_\_\_\_\_ Year \_\_\_\_\_

Customer Concerns (Key Purchase Criteria)	Relative Importance to Customers (%)	Customer Rating					
		Comp. A 1-10	Comp. B 1-10	Comp. C 1-10	Avg. for Compet.	Your Business 1-10	Your Business
Product-Related Factors		██████████	██████████	██████████	██████████	██████████	S u b e r i e r
1							
2							
3							
4							
5							
6							
7							
Service-Related Factors		██████████	██████████	██████████	██████████	██████████	S u b e r i e r
1							
2							
3							
4							
5							
6							
7							
Totals	100%						

% Superior = 1 pt. above average for competitors

% Equivalent = within 1 pt. of average for competitors

% Inferior = 1 pt. below average for competitors

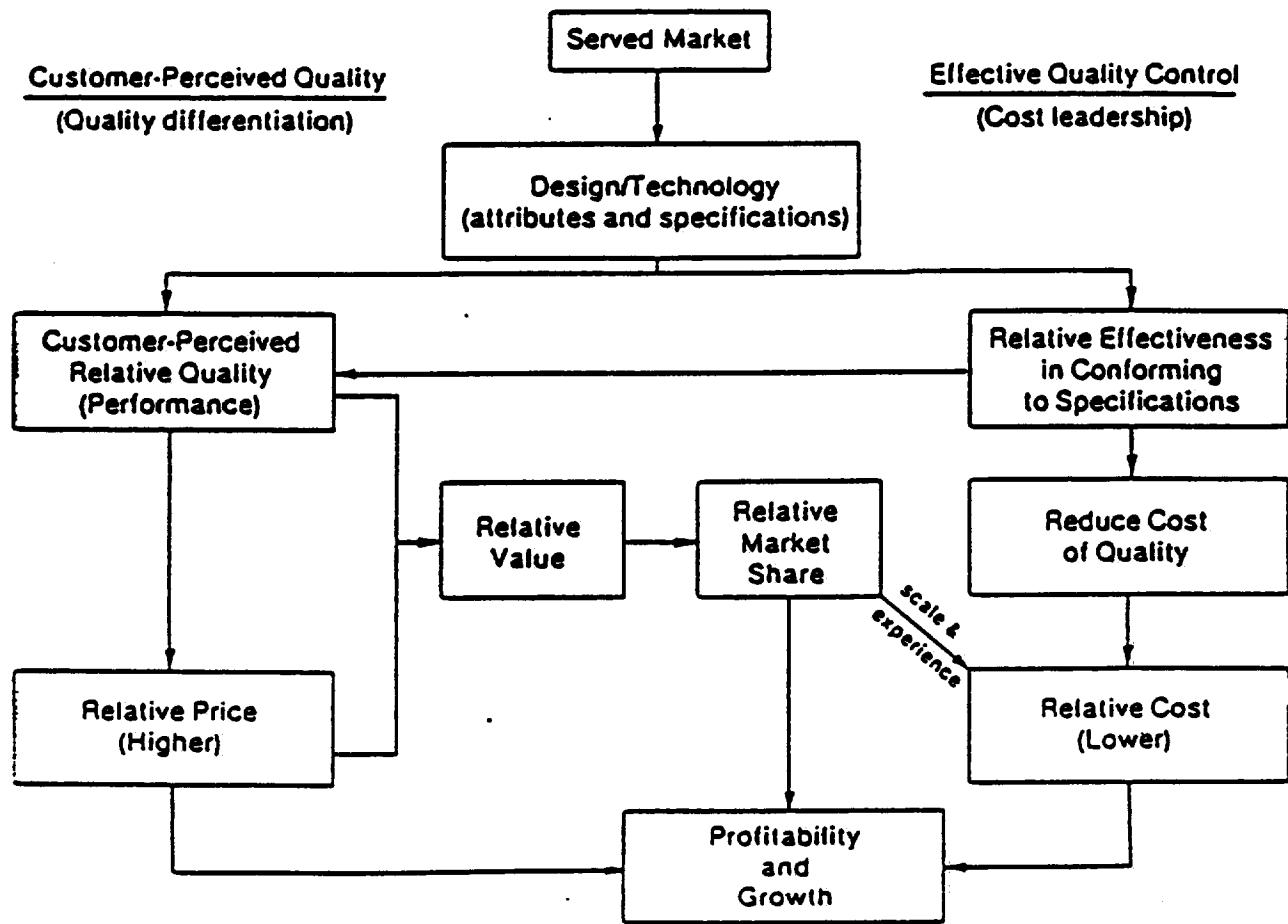
Relative Product Quality = Superior minus Inferior =

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## Key Questions

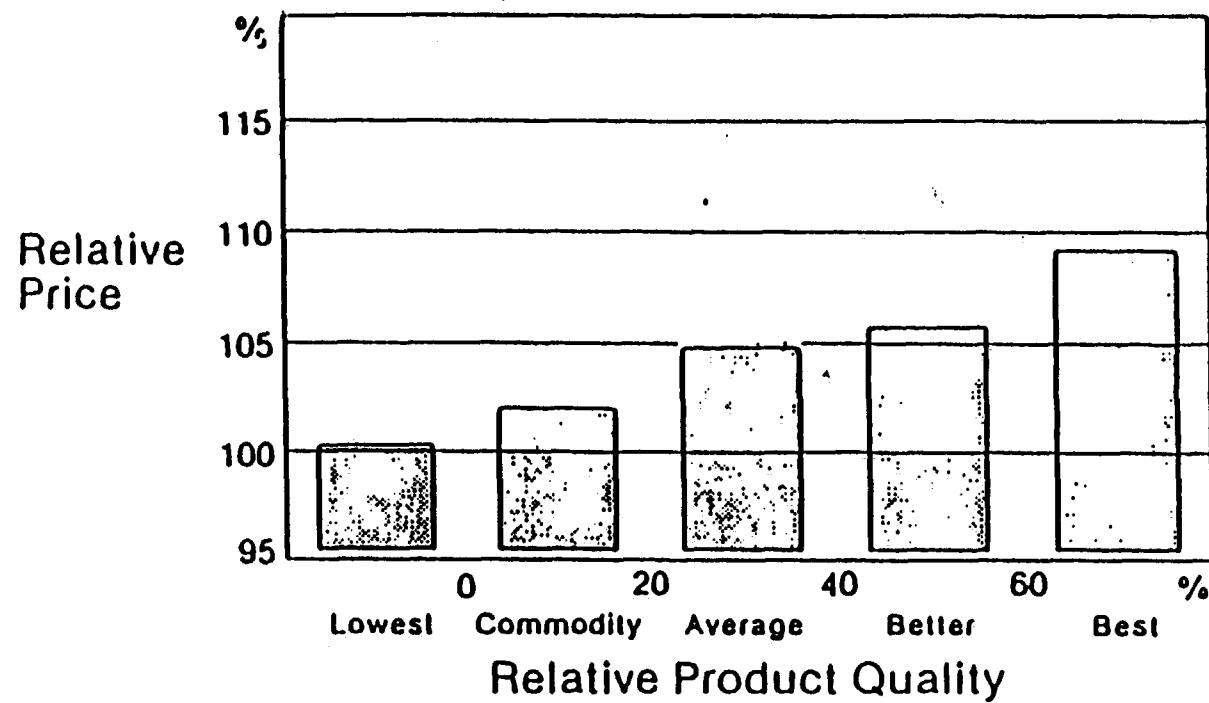
- Why is customer-perceived quality important?
- How can you formulate a product quality strategy?

## How Quality Drives Profitability and Growth



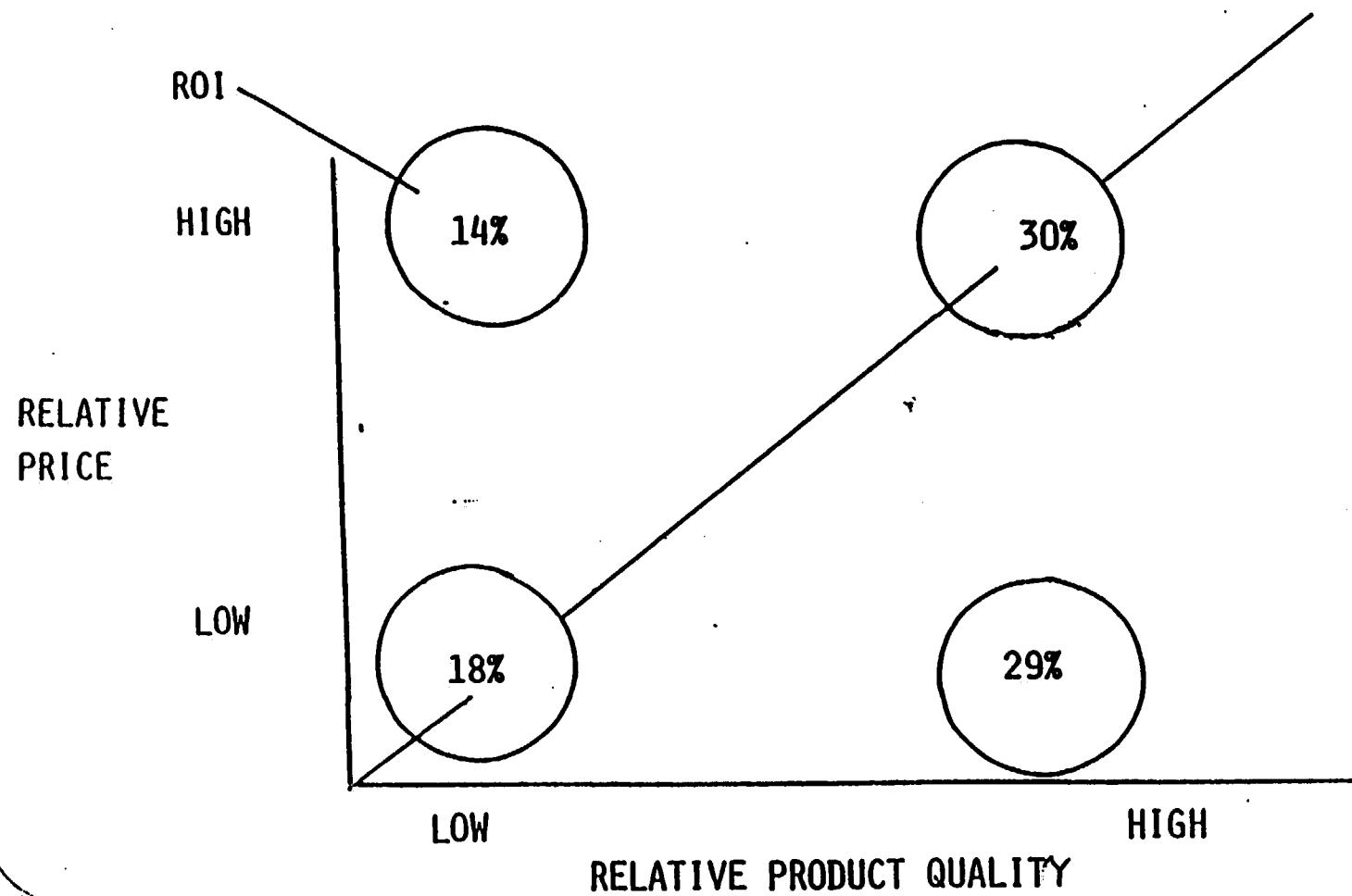
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## Customers Pay More for Better Products



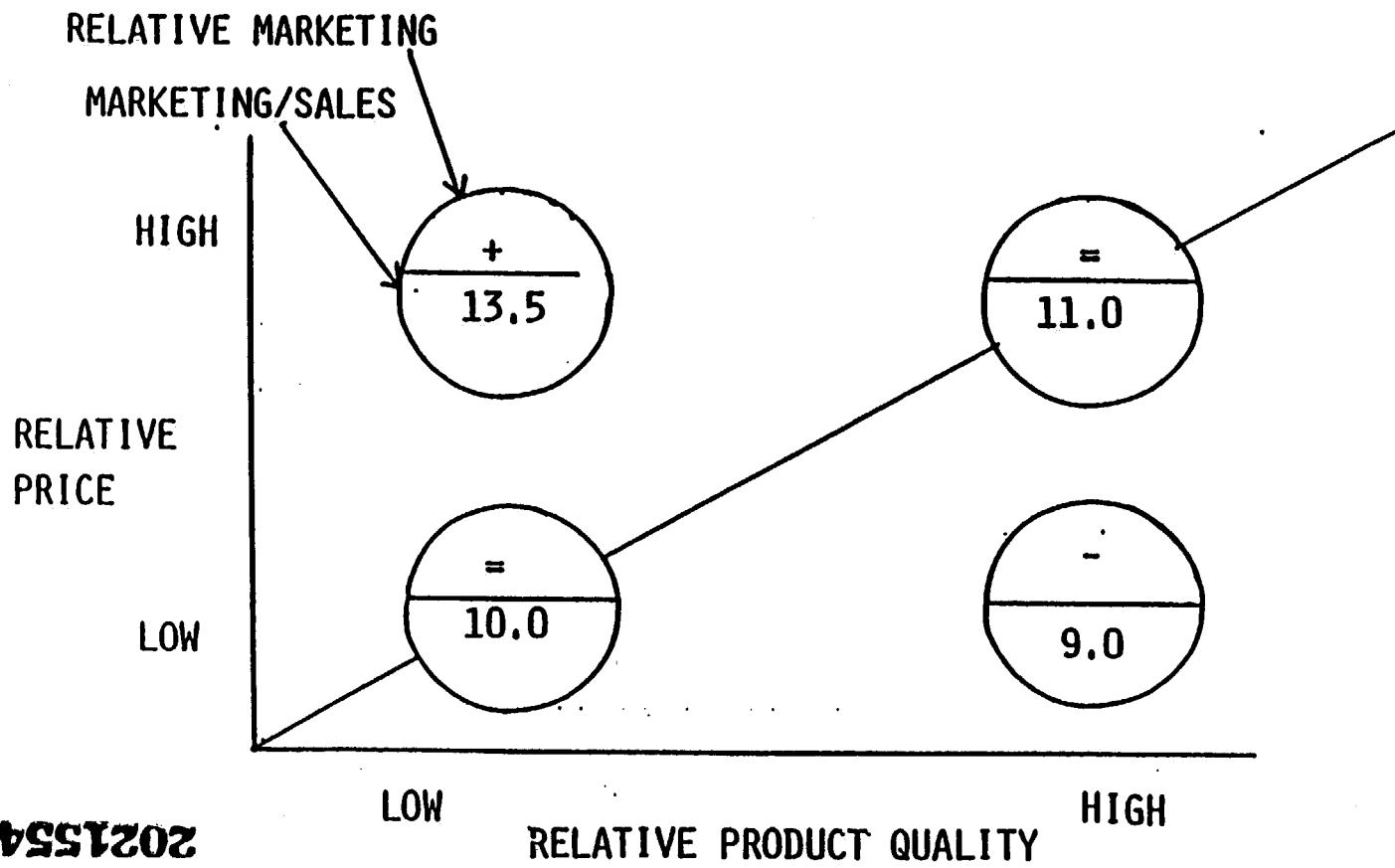
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## WORSE VALUE MEANS POOR RESULTS



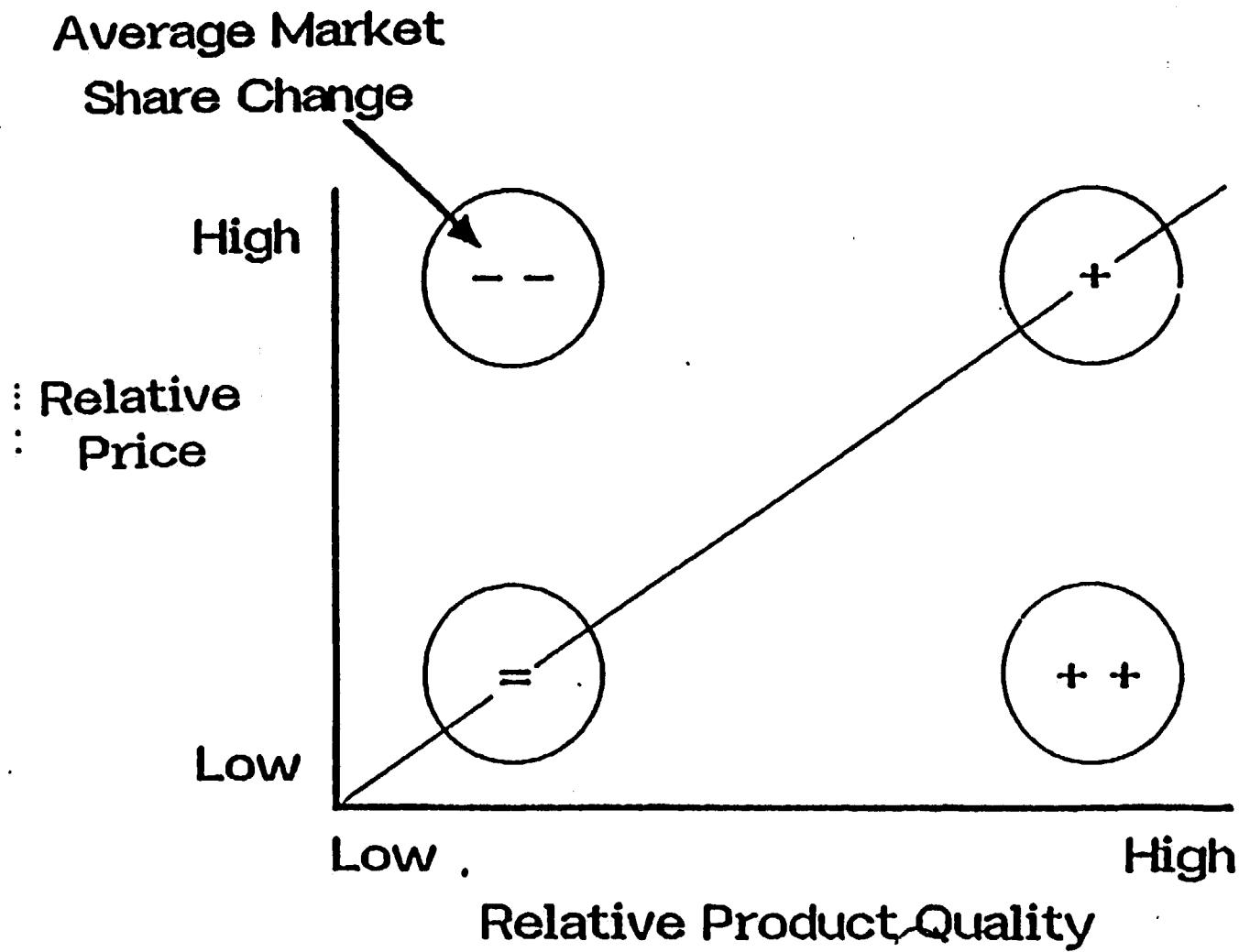
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POOR VALUE BUSINESSES LOSE SHARE,  
IN SPITE OF HIGHER MARKETING EXPENDITURE



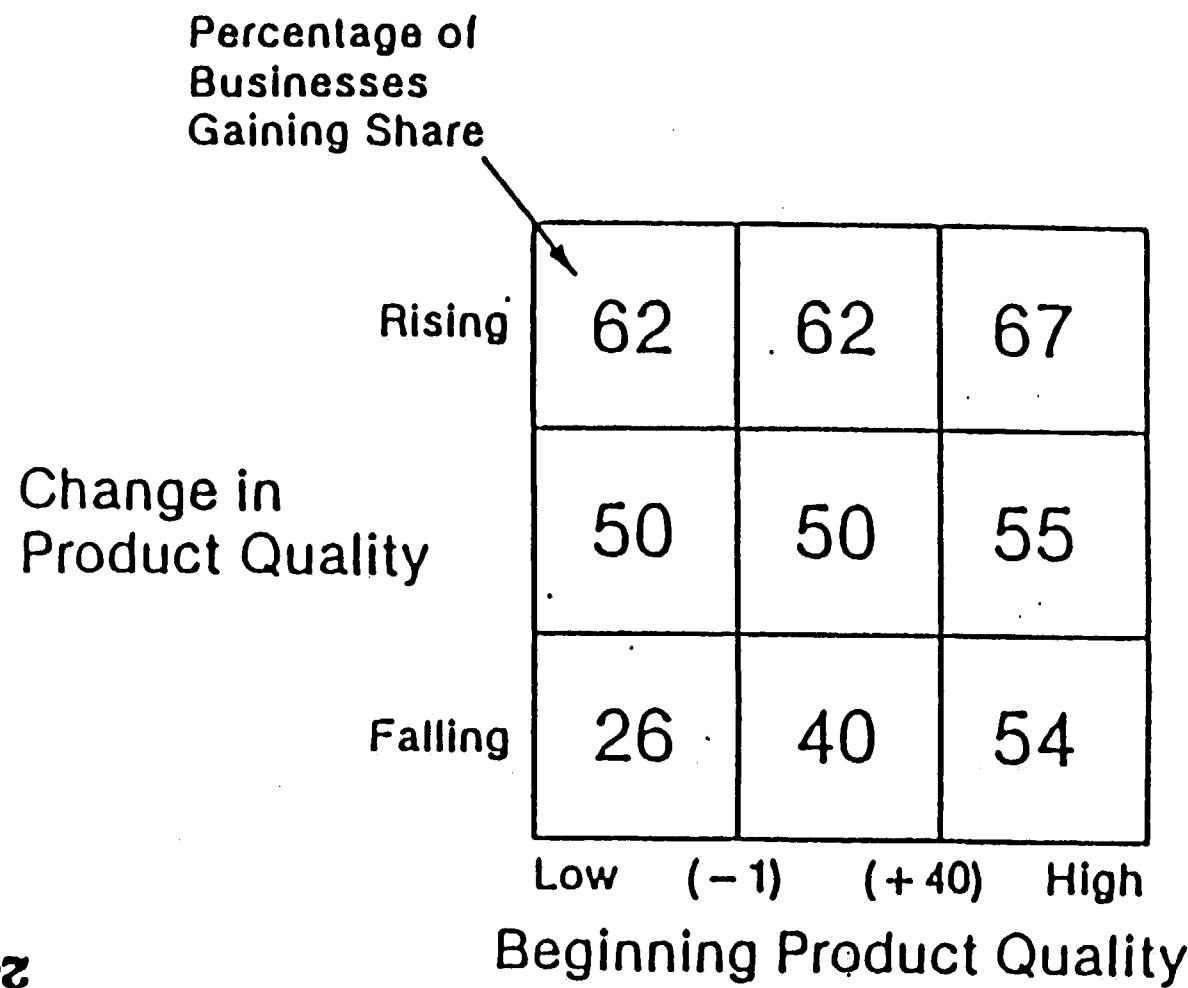
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## POOR VALUE BUSINESSES LOSE SHARE

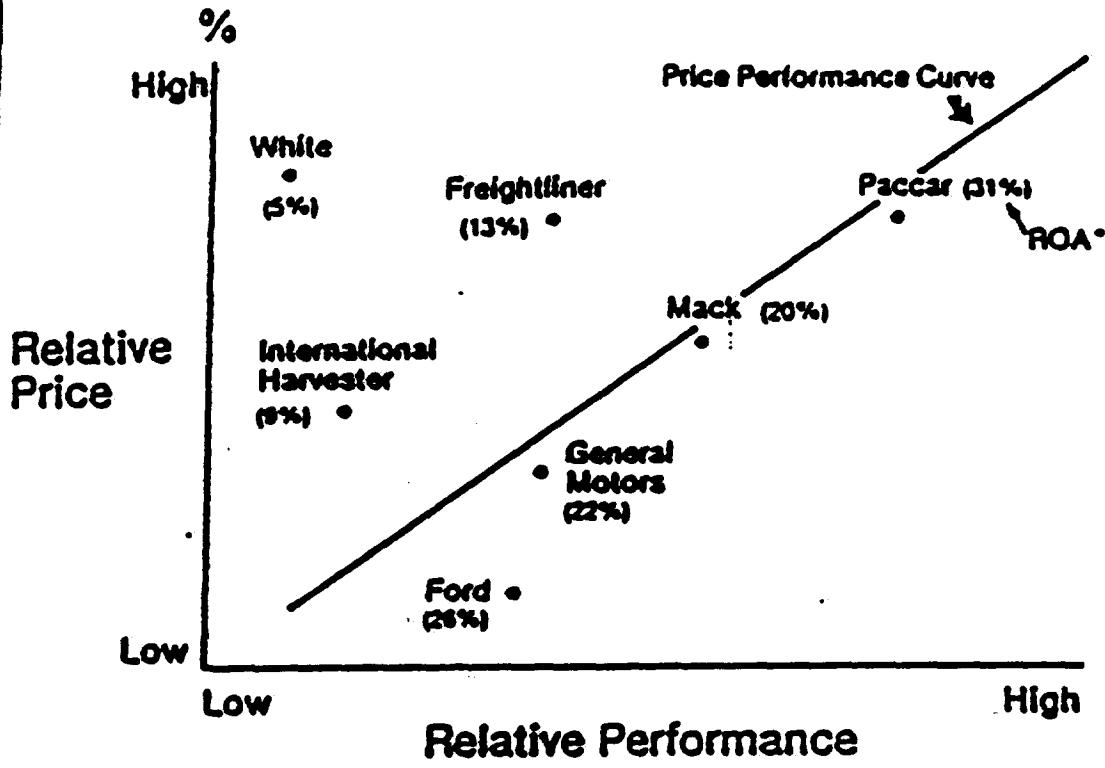


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# High and Rising Product Quality Increases Odds of Gaining Share



## Value Map: Heavy-Duty Trucks



\*Public data sources were used to estimate ROA (return on assets). Price and performance positions are based on an article by Hall, HBR July-August 1980.

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"Quality is our best assurance of customer allegiance,  
our strongest defense against foreign competition, and  
the only path to sustained growth and earnings."

John F. Welch Jr.  
Chairman  
General Electric Company  
*Business Week*, November 1, 1982

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# Quality Winners vs. Quality Losers

## Winners

- Emphasized real customer expectations
- Researched customer needs
- Used customer-based quality performance measurements
- Formulated QC systems for all functions

## Losers

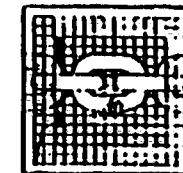
- Downgraded the customer view
- Made high quality synonymous with tight tolerances
- Tied quality objectives to manufacturing flow
- Expressed quality goals as number of defects per unit
- Formalized QC systems only for manufacturing

Source: GE task force on product quality

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# QUALITY POLICY



October, 1983

The quality of products and services is of the utmost importance for the continuity of our Company.

By adopting a quality policy aimed at complete control of every activity, maximum quality, productivity, flexibility and a reduction in cost prices will be achieved.

Every employee must be imbued with an attitude directed towards a continuous striving for improvements.

The Board of Management has decided to give vigorous direction to a Company-wide approach to quality improvement.

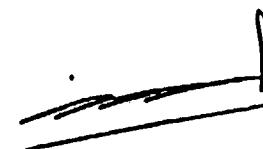
Further shape and content will be given to this initiative in the coming months.  
The main points of our quality policy are:

- 1 Quality improvement is primarily a task and responsibility of management as a whole.
- 2 In order to involve everyone in the Company in quality improvement, management must enable all employees – and not only the employees in the factories – to participate in the preparation, implementation and evaluation of activities.
- 3 Quality improvement must be tackled and followed up systematically and in a planned manner. This applies to every part of our organisation.
- 4 Quality improvement must be a continuous process.
- 5 Our organisation must concentrate more than ever on its customers and users, both outside and inside the Company.

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- 4 Quality improvement must be a continuous process.
- 5 Our organisation must concentrate more than ever on its customers and users, both outside and inside the Company.
- 6 The performance of our competitors must be known to all relevant units.
- 7 Important suppliers will have to be more closely involved in our quality policy. This relates to both external and internal suppliers of goods as well as of resources and services.
- 8 Widespread attention will be given to education and training. Existing education and training activities will be assessed, also with regard to their contribution to the quality policy.
- 9 Publicity must be given to this quality policy in every part of the Company in such a way that everyone can understand it. All available methods and media will be used for internal and external promotion and for communication.
- 10 Reporting on the progress of the implementation of the policy will be a permanent point on the agenda in Review meetings.

The Quality Steering Group, under the direction of the Board of Management, together with the Corporate Quality Bureau will provide support and coordination at corporate level.



Dr. W. Dekker



**PHILIPS**

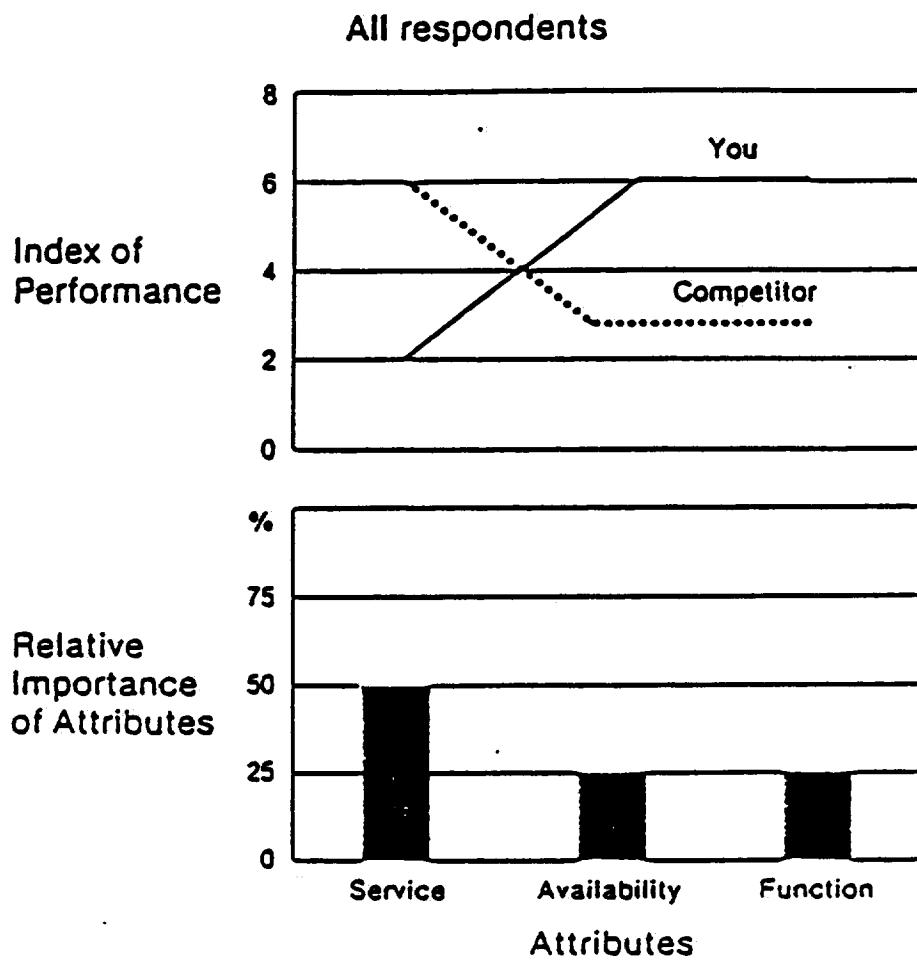
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## Developing Action Plans to Improve Quality

- Nominate a quality differentiation strategy based on the most meaningful way to segment the market to gain competitive advantage
- Analyze the differences between the opinions of managers (quality profiling sessions) and customers (surveys)
- Develop a consensus on
  - What management thinks customers want
  - What customers want
  - Which attributes need improvement
  - Which functional departments need to take what action
- Enhance cooperation across functional departments by focusing your
  - Product design
  - Manufacturing process
  - Product service
  - Quality control system and
  - Marketing effortto be more effective in delivering quality and value to your various customer segments.
- Design a quality program that specifically aims functional projects at your product attribute improvement needs

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**Going through Quality Profiling  
You Discover More about the Marketplace  
(attributes, weights, ratings)**



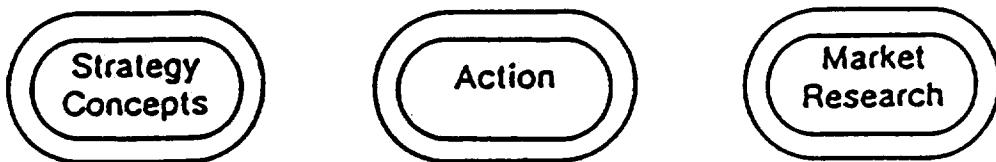
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# Options for Improving Relative Product Quality

- **Relative Performance**
  - Change performance of your product
  - Change perception of performance (Salesforce, advertising)
    - You
    - Competitor
- **Importance of Attribute**
  - Change mix of individuals
    - Market segmentation / focus
    - Decision maker
  - Change perception of individuals (Salesforce, advertising)

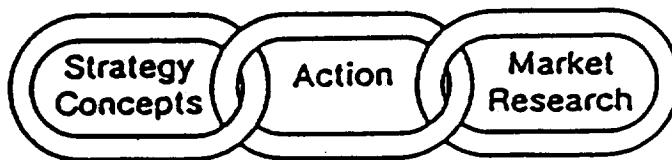
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## Formulating a Product Quality Strategy



### Process

- **Avoids narrow technical focus of market research**
- **Avoids abstract flavor of strategic concepts**
- **Ensures management involvement**
- **Ensures coupling across functions**



### Results

- **No essential steps overlooked**
- **Quantified payoff**
- **Commitment to implementation**
- **Cooperation across functions**

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